



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,549	04/27/2001	Anant Achyut Setlur	RD-28546	9812

6147 7590 04/29/2003

GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH CENTER  
PATENT DOCKET RM. 4A59  
PO BOX 8, BLDG. K-1 ROSS  
NISKAYUNA, NY 12309

EXAMINER

KOSLOW, CAROL M

ART UNIT	PAPER NUMBER
----------	--------------

1755

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/681,549

Applicant(s)

SETLUR ET AL.

Examiner

C. Melissa Koslow

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 16, 18 and 20-27 is/are rejected.
- 7) ☒ Claim(s) 12, 14, 15, 17 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 1755

The disclosure is objected to because of the following informalities:

Applicants need to provide the serial number and the filing date for the application discussed in the "Cross Reference To Related Applications" section on page 1. The subscripts in the formula in the last line on page 3 where cut off and should be provided. On pages 3 and 5 and in the abstract, the dot between "MgF<sub>2</sub>" and "GeO<sub>2</sub>" is missing. Finally, on page 6, applicants should indicate table 1 is figure 9.

Appropriate correction is required.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign not mentioned in the description: Reference number 10 in figure 8. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to because there is a discrepancy between the terminology used in figure 7 and that used in the specification for the same compound. Figure 7 uses the term "Ca apatite" and paragraph [0028] uses the term Ca halophosphate. Applicants should use the same term throughout the disclosure. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claims 1, 3, 6, 8, 9, 11, 12, 14, 15, 17, 19, 23, 26 and 27 are objected to because of the following informalities:

In claims 1, 6 and 9, the subscripts in one line overlap the superscripts in the following line. The subscripts in the formula "(Ba,Sr,Ca)Mg<sub>2</sub>Al<sub>14</sub>O<sub>25</sub>" in the last line of claim 6 on page 10

Art Unit: 1755

and in the last line of claim 27 are cut off. In claims 1, 6, 9, 15, 17, 21 and 27, the dot between “MgF<sub>2</sub>” and “GeO<sub>2</sub>” is missing. In claims 3, 8, 11, 14, 23 and 26, the first occurrence of “preferably” should be deleted as it is unnecessary. In claim 12, the “5” should be a subscript and the reference to the “a” variable should be deleted since there is no “a” variable in the formulas in this claim. Claim 14 should be deleted since there is no “a” variable in the formulas of claim 12. In claim 19, the phrase “and manganese co-” should be deleted since the claimed BAM phosphors are only activated by europium. Finally, in claim 26, “i” should be deleted.

Appropriate correction is required.

Claims 17 and 18 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 15 and 16. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 2, 7, 10, 13, 16, 18 and 20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

There is a discrepancy between the claimed absorbed wavelength range and the range taught by the specification. Paragraph [0020] teaches the preferred absorption range is about 350 to about 400 nm and the claims teach the preferred range is about 350 to about 410 nm. This discrepancy needs to be corrected.

Art Unit: 1755

Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 is improperly dependent on claim 20. Claim 20 does not teach a light source. It should depend from claim 25.

The narrow phrase or number range after the term "more preferably" in claims 3, 8, 11, 14, 23 and 26 have been given no patentable weight. This is because the phrase or number range after the term "more preferably" are examples of the broad term or range and claims are given their broadest interpretation. Applicants may add dependent or independent claims to the above narrow phrase or range.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 9-11 and 21-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-13 of copending Application No. 09/681,686. Although the conflicting claims are not identical, they

Art Unit: 1755

are not patentably distinct from each other because the light source claimed in Application No. 09/681,686 suggests the claimed light source and phosphor blends.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 10-12 of Application No. 09/681,686 teach a light source comprising at least one LED capable of emitting electromagnetic radiation having a wavelength in the range of near UV to blue, preferably about 350 to about 420 nm, and comprising a phosphor having the formula  $(\text{Ca}, \text{Sr}, \text{Ba})_a(\text{PO}_4)_3(\text{OH}, \text{Cl}, \text{F}):\text{Eu}^{2+}, \text{Mn}^{2+}$ , where  $a$  is 4.5-5. This light source suggests the light source of claims 21-26 of the present application. Claim 13 of Application No. 09/681,686 teaches the phosphor can be combined with  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu}^{2+}$  in the claimed light source. This light source suggests the light source of claim 27 and the phosphor blend of claims 1-3 and 9-11 of the present application.

Claims 21 and 22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,252,254 (Soules et al). Although the conflicting claims are not identical, they are not patentably distinct from each other because the light source claimed in Soules et al suggests the claimed light source.

Claims 1 and 2 teach a light source comprising at least one LED capable of emitting electromagnetic radiation having a wavelength in the range of blue, preferably 420-470 nm, and comprising a phosphor having the formula  $\text{BaMgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}, \text{Mn}^{2+}$ . This light source suggests the light source of claims 21 and 22 of the present application.

Claims 1-8 and 21-27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,501,100

Art Unit: 1755

(Srivastava et al). Although the conflicting claims are not identical, they are not patentably distinct from each other because the light source claimed in Srivastava et al suggests the claimed light source and phosphor blends.

Claims 1-6 of Srivastava et al teach a white light emitting light source comprising at least one LED capable of emitting electromagnetic radiation having a wavelength in the range of near UV to blue, preferably about 370-405 nm, and a phosphor blend, where the first having the formula  $\text{Sr}_2\text{P}_2\text{O}_7:\text{Eu}^{2+}$ ,  $\text{Mn}^{2+}$  and the second is  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu}^{2+}$ . This light source suggests the light source of claims 21-26 of the present application. This light source suggests the light source of claims 21-27 and the phosphor blend of claims 1-8 of the present application.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Soules et al.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.



Art Unit: 1755

This reference teaches a light source comprising at least one LED capable of emitting electromagnetic radiation having a wavelength in the range of blue, preferably 420-470 nm, and comprising a phosphor having the formula  $\text{BaMgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}, \text{Mn}^{2+}$ . The reference teaches the claimed light source.

Claims 1-8 and 21-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Srivastava et al.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This reference teach a white light emitting light source comprising at least one LED capable of emitting electromagnetic radiation having a wavelength in the range of near UV to blue, preferably about 370-405 nm, and a phosphor blend, where the first having the formula  $\text{Sr}_2\text{P}_2\text{O}_7:\text{Eu}^{2+}, \text{Mn}^{2+}$  and the second is  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu}^{2+}$ . The examples show this mixture of phosphor has a color coordinates substantially on the black body locus of a CIE chromaticity diagram. The reference teaches the claimed phosphor blend and light source.

Claims 12, 15 and 19 would be allowable if rewritten to overcome the objections, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.



Art Unit: 1755

Claims 13, 16 and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The claimed phosphor blends of claims 12, 13, 15, 16, 19 and 20 are not taught or suggested by the cited art of record.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (703) 308-3817. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (703) 308-3823.

The fax number for Amendments filed under 37 CFR 1.116 or After Final communications is (703) 872-9311. The fax number for all other official communications is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661 or (703) 308-0662.

cmk  
April 28, 2003

  
C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700